

Blended Learning in International Human Resource Development

On the characteristic features and the comparative didactic advantages of face-to-face learning, distance learning and e-learning

Prof. Dr. Rolf Arnold¹

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¹ *Holder of Chair for Education, esp. Vocational and Adult Education, and Head of the Centre for Distance Studies and Continuing Education (ZFUW) at the University of Kaiserslautern and of the Rhineland-Palatinate Virtual Campus (VCRP)*

1 *Basic hypotheses and objectives*

Integration hypothesis

The initial euphoria prompted by the expectations attached to the opportunities afforded by self-learning courses and virtual methods of content distribution has waned somewhat in the recent professional debate on adult learning (Nuissl et al. 2003, p.5): E-learning in continuing education practice does not often appear to work properly without face-to-face learning.

According to an overall assessment of current experiences by the *Deutsches Institut für Erwachsenenbildung* (German Institute for Adult Education) in Bonn, preference is presently given to approaches that combine e-learning with the face-to-face method (Kraft 2003, p.43).

In international discussion, too, the view is gaining currency that the various distribution and didactic methods need to be *integrated*. In recent years, for example, technology-based distributed learning (TBDL) has gained ground internationally. TBDL integrates different ways of teaching and learning in a specific didactic setting:

“A distributed learning environment is a learner-centred approach to education, which integrates a number of technologies to enable the opportunities for activities and interaction in both asynchronous and real-time modes. The model is based on blending a choice of appropriate technologies with aspects of campus-based delivery, open learning systems and distance education” (Institute of Academic Technology/University of North Carolina; cited after Bates 2000, p.27).

These integral approaches are 'hybrid learning environments' (cf. Kerres 2000), where traditional face-to-face methods, self-directed learning processes and technology-based modes of learning are combined to a validated purpose. Bloh and Lehmann have stressed this hybrid concept in the debate in Germany and advocate the following:

Accounting for the respective strengths and weaknesses, a coherent combination of

- basic components (asynchronous teaching-learning networks) with, for example,
- elements of face-to-face study,
- elements of (classic) distance study (guided independent study approach),
- web-based multimedia and/or hypermedia elements along with
- aspects of teleteaching and teleconferences (remote classroom approach) (Bloh/ Lehmann 2002, p.93)

They bring the basic argument emerging in the current international debate into sharp relief. New technologies in teaching and learning are applied not to seek the one best method, but to identify a sound combination of the specific advantages of the various modes. To do so, it is indispensable to conduct a more precise analysis of the comparative didactic – and in this case developmental - advantages of the various teaching-learning modes. This is what the present report aims to do in outline.

Hypothesis 1: Comparing the respective capabilities and advantages of face-to-face learning, distance learning and e-learning will not result in identifying a one best approach. Rather, the vision emerging in the international debate is one of an integrated deployment of new technologies in the teaching-learning setting that advocates a didactically sound combination of these learning methods in so-called hybrid learning environments. This is about integration, not substitution (= integration hypothesis).

Implications for development cooperation:

The responsible use of new technologies in the reorganization and ongoing development of international competency-building should not succumb to a multimedia euphoria that sees e-learning as the answer to all problems. Instead, what we need above all (!) is a didactic strategy for international human resource development as a whole. Only as part of this strategy can sound decisions be taken on how suitable face-to-face teaching, distance learning and e-learning are for achieving what goals and building what competencies in the light of today's findings in teaching-learning research.

Hypothesis about the general transfer proximity of distance learning

As to the use of new teaching-learning technologies in development policy, we can say this much: In international human resource development, distance has always been a basic problem, because cooperation is often with countries and regions that are many thousands of miles away from Europe or the learning measures. For many decades attempts have been made to solve this problem by flying counterparts or scholarship-holders to Germany where, after a German language course, they obtained their qualifications at specialized training establishments. This practice has been frequently criticized, and in the last 20 years projects in particular have increasingly availed themselves of local, foreign-language short-term measures or upgrading courses in a third country. A major target of criticism was the *transfer problem*: Specialists from developing countries acquired qualifications far away from their occupational setting in a different language and/or cultural milieu, which on their return home they were then supposed to apply in work environments from which they had frequently become alienated.

Looking at the recent debate on continuing education, we can see that in all the more modern approaches in continuing occupational training, the *transfer distance* between the learning location and the place where qualifications are put to use has shortened. The role of

workplace learning and training in various learning locations has thus greatly increased in recent years, particularly in corporate HR development. (cf. Dehnbostel 1996; 2001a; b; Hanft 1997; Reinmann-Rothmeier/Mandl 2001). At the same time, the debate surrounding distance-learning didactics on the ‘disappearance of distance from distance learning’ (Arnold 2000) has sharpened an awareness that the distance learning approach is not just a form of learning with a short transfer distance – learners frequently remain in their occupational and social settings and these are often deliberately catered for (e.g. in project work and final qualifying assignments) - but also that through the increasing use of chatrooms, e-mail, etc. distance learning is also less susceptible to 'distance'. On the contrary: the facilities for technology-based queries and contact with the 'teacher' enable an *personalized learning process* that go far beyond the level of communication afforded by face-to-face learning/teaching. Incidentally, in some face-to-face situations (e.g. mass lectures) the distance to the participants is greater than in distance teaching or study courses. These also adhere to the rather dubious precept of 'a uniform pace of learning' and a kind of 'staple diet for all'² that may at best just happen to appeal to learners' 'personal tastes' (= individual learning requirements).

For the transfer problem in areas of international human resource development, we may hence infer the hypothesis:

Hypothesis 2: In many respects, distance learning approaches have greater transfer proximity. Learners remain in their social and frequently also occupational settings and can thus directly 'match' what they have learnt against their issues and problems and situate it in their fields of activity.³ Application of the skills and knowledge acquired often also forms part of the general didactic design (hypothesis of the general transfer proximity of distance learning).

Implications for development cooperation:

As concerns the special difficulties of international human resource development, the 'merged'⁴ and/or off-campus forms of continuing education

² The adult educationalist Erhard Meueler from Mainz talks about the 'head waiter syndrome' in adult education (“serving up the cooked meals”), which he attempts to tackle using a 'recipe book of methods and social forms' (Meueler 2001, p.198 et seqq.).

³ The notion deriving from learning theory of 'situating' what is learnt, which is what was and is meant in adult education by the principle of gearing learning to the learner or to the situation: The idea behind learner-centred learning "(...) is that adult education measures – the courses and discussion groups – should not normally be geared to a preset subject matter but to the prior experience and expectations of those addressed by the measures." (Tietgens 2001, p.305)

⁴ The notion of 'Entgrenzung' (merging boundaries) is increasingly used in the international debate on the effects of globalization and postmodernism. In his book entitled 'What is Globalization', the much-respected

afford some advantages: Distance or e-learners can remain in their professional and personal environments and transfer the acquired skills and knowledge much more directly. At the same time, this kind of 'workplace learning' or 'parallel in-service course of study' ensures acceptance of their transfer efforts from the outset because they remain part of the context in which this know-how is applied, and are not alienated from it. It is not uncommon for scholarship-holders to return after several months or years in Germany or Europe to the 'backward' system and encounter so much resistance that they can hardly apply anything or only little of what they have learnt. Considering the substantial costs usually incurred by this kind of 'travelling education', the issue of cost-efficiency is now almost unavoidable.

In HR development cooperation the scope afforded by off-campus teaching and learning, alternating with face-to-face phases as in sandwich methods, for instance, has not even begun to be genuinely explored.⁵ For this reason, we suggest that cooperation projects increasingly employ this kind of in-service or workplace-linked approach (e.g. through reduced working hours and temporary 'secondment' to face-to-face upgrading courses). From a cost standpoint, but also – and in very special measure! – with a view to the transfer and sustainability of international competency-building, this would appear to be of fundamental importance.

Blended learning and the hypothesis of the primacy of didactics

In recent years, *new media* have been increasingly propagated as the great hope for a new kind of adult learning. Multimedia and e-learning measures⁶ are often seen as *the* cure-all for continuing education, human resource development or education systems in international competition. In the latest newsletter of the *Forschungsinstitut für betriebliche Bildung* (Research Institute for Corporate Training), for example, under the heading, 'Conquering international markets with e-learning' we read:

“More than any other product in the education sector, e-learning would seem predestined for international marketing. With properly prepared, network-assisted seminars, education agencies can gain entry into international business. (...) E-learning affords a major business advantage for international marketing: the outlay pattern for network-assisted multi-media learning is quite untypical for the education sector. Comparatively high initial investments are offset by lower overheads – even with ongoing content updates.” (Severing/Fietz 2003, p.3)

sociologist Ulrich Beck uses the term 'Vielörtlichkeit' (multi-locality), postulates a transition from 'monogamous to polygamous locality' and asserts that "Our own lives are no longer tied to a place, they are no longer fixed, settled. We live 'en route' (literally and figuratively), we lead a nomadic life, in the car, in the airplane, in the train or on the telephone, in the Internet, a transnational life based on and shaped by mass media. These technologies are media that transcend time and place. They eliminate distance, make distance close and proximity distant – absence in the same place. Living in one place no longer means living together and living together no longer means living in the same place.“ (Beck 1997, p.131 and 138 et seq.).

⁵ In this context cf. the experience gained by the CAPADOC project at the University of Kaiserslautern, where Chilean university lecturers are upgraded online and invited to attend a short in-depth face-to-face course in Germany (ecampus.uni-kl.de/public/U_KL_CAPADOC/index.html).

⁶ E-learning can be understood "as a generic term for all variants of internet-based teaching and learning measures" (Kerres 2001, p.14), i.e. as *learning in virtual information and communications networks*.

This line of argumentation has been confirmed by extensive experience. Nonetheless, the maintenance costs of distance learning and e-learning are sometimes greatly underestimated. The users of these 'distant' facilities frequently seek far more contact with the institutional provider (via telephone, e-mail, etc.) than do users of face-to-face education measures, who can evidently already satisfy most of their 'contact needs' through simple participation and experience (and face-to-face interaction).

a) The term *multimedia*

There is no single definition for *multimedia* and it is understood to mean all kinds of things. In the present report, the hallmark of multimedia applications and/or *new media* is that they integrate different storage media and communication media and are network-enabled (cf. Fischer/Mandl 2000). These media are network-enabled in the sense that they can be used in internal networks (*intranets*) of organizations or companies or on the global Internet for the distribution of data. On the other hand, network-enabled means that the new electronic media enable the user to collate information and thus connect contents, not just technical systems.

A new dimension opens up through the possibility of integrating communicative functions, too, with the help of *interactive media*, thus adding a social or at least interactive aspect to the content one. Developing and disseminating network technologies enables new forms of cooperation between learners and teachers on the one hand and amongst learners on the other that would be inconceivable in this form and density in traditional training and continuing education.

b) The term *blended learning*

A term gaining increasing currency is 'blended learning'⁷ - a metaphor that really only suggests a suitable 'blend' of various learning scenarios, which is why the actual question relates to the criteria for measuring this suitability.⁸ These are primarily didactic, they help

⁷ Number 2/03 of Inwent journal in.puncto deals with the the concept of blended learning and concludes: "It is probably the same as with a good whiskey: It is the right mixture that makes the blend and hence the high quality" (Die richtige Mischung 2003, p.1). In the Financial Times, Davis (2001) observes that "Blended Learning has become the standard term for the use of a wide range of learning technologies and methods in the workplace. Examples include the traditional classroom, web-based tutorials, web-based simulations, online-collaboration, online-coaching, video-conferencing, phone conferencing, knowledge management systems ... the list goes on." (Davis 2001)

⁸ There are hardly any sound concepts or empirical research findings on this question. "It is not clear how the individual components of such arrangements can be combined for didactic effect, which technical, didactic-

gauge how far a learning scenario can really foster sustainable, competency-building learning. Also, cost-benefit considerations and – particularly in international HR development – the issue of worldwide accessibility are of growing importance.

Overall, though, the *hypothesis of the primacy of teaching* still applies.⁹ In other words, experience has shown that a higher relevance and pedagogic effectiveness in teaching-learning processes cannot automatically be attributed to the use of 'new media', so that any allusions to the 'educational value of the Internet' (Marotzki et al. 2000) are misleading and unsubstantiated.

All promises of easier, more motivated and more effective learning through the use of multimedia capabilities try to divert attention away from the fact “(...) that learning is impossible without willingness, concentration, the (often arduous) effort and students' own (re)constructing activities (as defined by Piaget); in short, without the learner doing learning work. In an overall pedagogic-didactic approach, technologies/media can be used to assist this process, but they *cannot replace* it.” (Bloh/Lehmann 2002, p.15 et seq.) The media selection, therefore, is always embedded in an overall didactic context:

“A didactic vision aimed at integrating the selected media into the planning process implies a detailed assessment of which medium is particularly efficient for achieving which objectives, for imparting which contents, for implementing which teaching methods and for promoting which target group.” (Seel/Dörr 1997, p.111).

As for basic and continuing education, the following applies:

“Good teaching may overcome a poor choice in the use of technology, but technology will never save bad teaching“ (Bates 1995; cited from *ibid.*, p.11).

It is not the medium or the choice of technology that makes the difference, it is the didactics and the adult or occupational education concept! This aspect is often overlooked and we are distracted by the apparent benefits of more rapid and convenient distribution. 'Learning' only takes place when the learner is able to acquire sustainable competencies. Easier accessibility of 'content', as the subject matter is sometimes called today, is no guarantee for success,

methodological and, not least, organizational standards are needed, for what learning contents, teaching-learning goals and learner types these environments are (particularly) suitable.” (Kraft 2003, p.44).

⁹ Klimsa provides a matter-of-fact definition: “Here, 'new media' are understood to denote hybrid media based on microprocessor technology, storage technology and/or communication technology that are also characterized by interactivity, individuality, asynchronicity and multifunctionality. They create a continuum amongst all forms of communication processes – from intrapersonal and interpersonal up to mass-media communication.” (Klimsa 1993, p.119)

however. Rather, the learner must also be able to ‘gain access’ to the content. This requires didactic analysis and preparation that offers learners helpful and practicable avenues for approaching the subject and prompts them to acquire knowledge, abilities and skills on their own. No competency has so far been developed just by clicking on and downloading 'content'. This is why the didactic approach takes precedence over all decisions on learning organization and distribution.

Hypothesis 3: Multimedia learning poses no or hardly any 'innate' didactic problems, but it does give rise to genuine adult education problems. This means that the quality and sustainability of face-to-face learning, distance learning and e-learning equally depend on the choice of contents, the didactic-methodological environment and on mobilizing and involving the learner – an aspect that is often overlooked in the general euphoria (hypothesis of the primacy of teaching).

Implications for development cooperation:

For the special problem of international HR development, this means that this sector in particular should step up efforts to develop adult education approaches further, rather than turn its attention too fast towards technology-based ways of learning. The options cannot be assessed and judged properly at all without a didactic strategy, if we want to prevent a virtual replication of unsuitable and frequently outdated models of adult learning (e.g. posting text on the web as a new form of knowledge 'fodder' overloaded with content).

This means that the new ways of reorganizing learning (distance learning and e-learning) clearly highlight the need to scrutinize everything – including the familiar and costly forms of face-to-face learning, which may have always been inadequate.

As we can see from the above, the point is not to switch approaches from face-to-face learning to distance learning to e-learning, but rather to develop a didactic strategy for sustainable adult learning in an intercultural context. So in international human resource development we must look somewhere other than where we thought - just as the following amusing story by Watzlawick shows:

A drunk is looking for something under a street light. A policeman asks him what he is looking for, and after he replies 'My key', they both search together. After a while, the policeman asks, “Are you sure that you lost your key here?” The drunk answers, “No, not here, behind the hedge, but there is more light here!” But we have not reached the punch-line yet. Watzlawick asks the reader, “Do you find this absurd?” – and of course we all find this preposterous – “If so, you, too, are looking in the wrong place!” (Watzlawick 1990) Similarly,

I think that the solution to our problems in international competency-building is not technological, it must be didactic. We will not find a solution just by 'switching' from face-to-face learning to distance learning or e-learning. The two latter forms of learning organization and distribution merely offer more ways to organize sustainable competency development.

For this reason, we can postulate the following additional hypothesis:

Hypothesis 4: We will not be able to fully substitute one monolithic model (face-to-face learning) with another (e.g. telelearning, virtual learning). Rather, our concern must be to combine the various modes and ways of learning in a didactically effective way into a complementary strategy. The current dominance of teacher-centred front-of-class teaching in many areas of our social learning cultures has, however, been long outdated. (hypothesis of the end of monolithic models).

2 Building competencies through lifelong learning calls for clear criteria on significant and sustainable learning

Crossing three learning boundaries

Less than ever can adult learning today be confined to the traditional forms of imparting knowledge in institutionalized continuing education measures. Rather, competencies are developed throughout life, informally and through the self-directed learning of individuals, groups and organizations. What we need to do is to forge an adequate strategy for this variety of teaching-learning settings. What is needed, in my view, is a strategy of lifelong learning or life-accompanying learning that

is based on a broader *notion of content* that integrates both knowledge and experience, both abilities and values ('attitudes'), into the adult learning process,

- a) lifts the traditional boundaries of *learning locations* and also professionally facilitates, promotes and supports deinstitutionalized learning (workplace, autodidactic study), and finally

- b) not only facilitates learning by individuals, but enables and promotes the learning processes of *groups, organizations or even social units (e.g. regions¹⁰)*.

A key problem in education – internationally - is a learning culture based on front-of-class teaching (*knowledge 'fodder'*). Today, we know that central key qualifications and competencies are *not* imparted if learners (pupils, students, scholarship-holders) are not able or 'allowed' to take initiative and creative action when learning and approaching contents. Moreover, the concern is no longer to impart 'stored knowledge', instead, 'reflective' forms of knowledge in competency-building (method competency etc., in short: key qualifications) are becoming increasingly important. A purposive effort must be made to open the way to acquiring these, to make them accessible or 'experiential'.

Material knowledge (Know-how)	Reflective knowledge (Know-how to know)		
<i>Stored knowledge</i> (Knowledge for storing facts, theories, data, etc.)	<i>Method knowledge</i> (Knowledge on procedures for obtaining, presenting and communicating information)	<i>Reflection knowledge</i> (Knowledge for examining, criticizing and adducing reasons for concepts and assessing their implications)	<i>Personality knowledge</i> (Knowledge for recognizing personal involvement, i.e. emotions and interpretations, in interactions)

Fig. 1: From 'know-how' to 'know how to know' (based on Arnold/Schübler 1998, p.61)

In my view, this also implies that *multimedia* today is a relevant topic in the educational and human resource development debate, but is nonetheless of subordinate relevance (also, and particularly, in the context of globalization). By expecting too much from multimedia arrangements in learning measures, we are in danger of replicating front-of-class teaching knowledge 'fodder' in the virtual domain, so to speak, instead of first superseding it in real educational practice. Only after we have agreed on the objectives we are pursuing in education and competency-building, and on the didactic preparations that are required to develop a comprehensive and science-based operational competency in the respective learning cultures, can we actually put didactically relevant multimedia learning environments to effective use (to foster learning and support the acquisition of skills and knowledge) and

¹⁰ The notion of 'learning region' in particular is of key importance for international cooperation, but has so far hardly been addressed at all (cf. for example: www.fes.de/FESLBBerlin/Ressourcen/download/Broschuere_lernende_Region.pdf).

also – on the basis of empirical findings – objectively judge whether multimedia learning, as often claimed, facilitates both a convenient presentation of content and self-exploratory and more sustainable learning.¹¹

Hypothesis 5: Effective, sustainable, competency-building learning is only possible if learners can actively explore the material themselves. Method and problem-solving competencies and team ability can only develop if pro-active and cooperative learning is 'permitted' and deliberately encouraged (hypothesis of the end of the passive learning model).

Implications for development cooperation:

Development cooperation institutions need a competency model for their work. This means that they, too, need to define more clearly what competencies for self-directed and cooperative activities they want to promote in their HR development measures. In the international competency debate, German international cooperation will have no option but to set objectives, such as imparting key qualifications or instigating the development of competency in leadership, cooperation and organization, and to strive to achieve these effectively using practicable didactic strategies. Only after these strategies have been defined can any decision be taken at all on the most suitable learning and distribution organization (face-to-face or distance learning). Nonetheless – and this self-criticism is warranted – too many of the models presently used are passive learning models, that is, models that accord hardly any systematic role to self-directed learning by individuals, groups and organizations in partner countries.

¹¹ In my view, many contributors to the current debate take the second step before the first, 'presupposing' that multimedia also fosters the ability to act independently. They overlook that working at a PC is not necessarily the same as the autonomous effort to solve problems, and ignore that too much user-friendliness is not always conducive to the learner making his/her own efforts – Hegel talks about 'Anstrengung des Begriffs', the labour of understanding. This is exactly what the Frankfurt philosopher Gernot Böhme meant when he said that thoughtless visualization causes the imaginative faculty to atrophy.

Criteria for sustainable adult learning

We cannot circumvent the urgent need to settle didactic issues by turning to the convenient options of multimedia learning that do not overcome front-of-class teaching-learning culture, maybe even unintentionally reinforce it (due to its cinema and entertainment-like nature). In other words multimedia learning, too, must ultimately meet the criteria of sustainable learning suitable for adults that have been clearly defined by adult education research in recent years (cf. Fig. 2).

As far as developing competencies is concerned, a teacher-centred form of face-to-face learning is therefore just as restricted as a simple presentation of contents in a multimedia learning environment. Key to both forms of learning organization is that they must be designed to help the learner explore the subject – at least to a certain extent. In practice, this means prompting and requiring the learner to become active. To acquire knowledge effectively, it is not enough for learners to memorize contents; they must be able to implant it into their minds through cognitive effort. Important in this context is that they articulate it themselves (cf. Müller 1999), i.e. reproduce what they have learnt in their own words and apply it in other settings. The psycho-cognitive precept that applies here is that learning is 'thinking action', or 'organizing action' (*Ordnen des Tuns*), as coined by Swiss cognitive psychologist Hans Aebli (Aebli 1980).

Apart from the learner's own activity and self-directed efforts in the learning process, on the basis of empirical studies Mandl and Reimann-Rothmeier have identified three other factors that play a role in sustainable learning. These are shown in Figure 2.

These considerations lead to another hypothesis:

Hypothesis 6: Sustainable, competency-building learning is generally possible in all forms of learning organization (face-to-face teaching, distance learning and e-learning). The form is not the decisive factor; the crucial question is to what extent didactic scenarios meets the criteria of sustainable adult learning (active, self-directed, constructive, situational, social).

Five criteria for sustainable lifelong learning	
<i>Active</i>	Learning is only possible through the active participation of the learner. This requires learners to be motivated to learn and have or acquire an interest in what they are doing and how to do it.
<i>Self-directed</i>	In the learning process, the learner takes over direction and control. Although the extent of this self-direction and control varies depending on the learning situation, no learning is possible without a degree of self-directed activity.
<i>Constructive</i>	Learning is always constructive. As a matter of principle, without the experience and knowledge background and interpretation of the individual no cognitive process can take place.
<i>Situational</i>	Learning always takes place in specific contexts, so that every learning process is also situational.
<i>Social</i>	In the final analysis, learning is also always a social process. For one, the learners and all their activities are always subject to sociocultural influences. For another, all learning is interactive.

Fig. 2: Adult learning and learning ability from a constructivist framework (based on Reimann-Rothmeier/Mandl 1996; 2001)

Implications for development cooperation:

A didactic strategy for international HR development would have to point out more accurately what special opportunities for active, self-directed, constructive, situational and social learning are available or not available in face-to-face learning, distance learning or e-learning modes. This would be a first step towards a didactically sound application of these three options based on their comparative advantages.

Something that should not be underestimated, though, is that distance learning and e-learning make the delivery level more transparent. Any developer of distance learning courses has to make the contents visible and verifiable. The same applies to e-learning.¹² The following figure shows that the criteria for sustainable lifelong learning are by no means met by just one

¹² Viewed in this light, employing this mode can also trigger an improvement in the quality of the whole curriculum of a provider. This effect is repeatedly described in the literature and also tallies with the Kaiserslautern experience: A fellow lecturer who didactically prepared his lecture as distance-study material could hardly advance an argument to himself or others as to why he should not present this material to his face-to-face students as well. If he decides to take this step, the next question is already preprogrammed: Why should face-to-face students have to attend his lecture if distance learners receive equal course credit for studying the material independently?

mode: All forms of learning and distribution can generally meet the sustainability requirement, and do so in a variety of ways. The advantages of distance learning and e-learning are not in any way automatic, i.e. for the most part they do not depend on didactic considerations, as is demonstrated later.

<i>Criteria for sustainable competency-building</i>	<i>Face-to-face teaching</i>	<i>Distance learning</i>	<i>E-learning</i>
'Active'	The learner can include his/her own objectives and 'learning projects', i.e. concerns, questions, etc., and take an active role, i.e. not merely act as a recipient-reproducer in the learning process.	Distance learners have their own learning and handling strategies for dealing with contents, must carry out assignments for submission on their own and keep in contact with the provider institution.	As in distance learning – the learners must have the basic competencies to actively shape their learner role, using the facilities in the learning environment.
'Self-directed'	The teacher provides scope for self-exploration and withdraws progressively to function as a learning mentor, facilitator or coach.	A large degree of self-organization is necessary and learners must direct the learning process and in part also the intensity and depth at which they engage in the individual modules.	Hypertextual materials in particular allow for a large measure of personalized learning, that can be self-directed
'Constructive'	Learners themselves work out results, that is they construct the learning object – guided by questions or guided texts.	Prepared material (contents) is processed but the learners must develop the learning object on their own (through their own cognition) and also construct applications and solutions themselves.	
'Situational'	Learning in the real-life setting, e.g. at the workplace (in the German 'dual system') with access to direct learning through experience	The learners remain in their own real-life and workplace setting and are therefore often 'closer' to the situations where what they learn can be applied (exception: initial university degree for example – a distance study course in law in preparation for the profession without being able to apply knowledge/skills in practical situations).	
'Social'	Opportunities for face-to-face interaction and real-life cooperation (project or life-like, activity-centred learning)	Face-to-face phases are usually also available with localized support and distance learners organize their own regional study groups that can be instigated by an institution.	Chatrooms, video-conferencing and e-mail facilitate a real-time exchange, which resembles direct social interaction in many respects, but with its own 'quality' as well.

Fig. 3: Sustainable learning in face-to-face teaching, distance learning and e-learning

3 *Didactic features of face-to-face learning, distance learning and e-learning*

While face-to-face learning, distance learning and e-learning are forms of learning organization and distribution of contents that differ in strict categorical terms and in their specific profiles, in actual practice many mixed modes have evidently already emerged. Rolf Schulmeister, for example, describes a number of hybrid forms that can be scaled by their relative share of virtual components, and distinguishes the following forms: face-to-face seminar plus web script – face-to-face seminar (plus script) plus communication platform – face-to-face seminar alternating with virtual tutorials or virtual seminars – virtual seminar proper and/or complete private study (Schulmeister 2002, p.130).

There is another point here, however: The terms face-to-face learning, distance learning and e-learning in turn denote a host of different arrangements that can differ greatly. Face-to-face learning can mean a front-of-class lecture as well as an interactive and cooperative seminar that is not confined to the input of the teacher but caters for the experience or even the feelings and problems of the participants. The same holds for distance learning and e-learning, as is demonstrated below.

Hypothesis 7: Face-to-face learning, distance learning and e-learning are prototypes that are mostly found in hybrid form. Analyzing the respective specific features and comparative didactic advantages of these prototypes can help identify which mode plays a special role for what definite competency-building requirements.

Face-to-face learning

Face-to-face learning or education¹³ designates the predominant pattern in learning cultures worldwide. People come together to learn, grouped around an older, experienced or even specialized professional who passes on his/her knowledge and competencies as a 'knowledge agent'. Today, high esteem is still attached to the function and position of these agents of knowledge in many cultures– in some cases they are elevated to an almost sacred status. This predominant form of learning culture is certainly rooted in dialogue as a specifically human form of exchanging information and knowledge. At least prior to the invention of the

¹³ 'Face-to-face' interaction seems to be a more appropriate term for the specifics of face-to-face learning than 'interactive learning', as e-learning also enables interactive learning.

letterpress and the mass circulation of books, as well as the literacy of broad sections of the population, there was no genuine alternative way of passing on knowledge.

The flip-side of these cultural and historical roots of face-to-face learning is its persistence as a learning model. Although various, often convenient sources of knowledge have been available for many decades already – at least in the developed countries of the world – hardly any *self-directed, autodidactic learning culture* has developed that could provide for a new rationale and didactically intelligent use of face-to-face forms of learning. Large parts of face-to-face teaching are still used for front-of-class knowledge presentation, as if nothing had changed in the last decades or even centuries, and as if there were no more didactically convenient ways of knowledge presentation today. Questions that are still virtually ignored are:

- Do learners really need to congregate to acquire new knowledge, abilities and skills effectively?
- What competencies can be developed without face-to-face interaction or with a scaled-down form of classroom teaching?
- What competencies can only be developed face-to-face? What are the disadvantages of this form?

An often overlooked problem with face-to-face learning is that face-to-face interaction is always only a direct interaction with one or a few learners, while the rest of the group (class, seminar participants) are obliged to listen. This is why classroom teaching tends to be a less cooperative form of learning, apart from approaches in modern vocational and technical activity-centred education. In her comparative study, the Canadian distance study expert Linda Harasim therefore asserts that

“In typical face-to-face classroom communication, participation rates are unequal. Firstly, the instructor takes up most of the available class time. Class discussion, if and when this occurs, is often characterised by one or two students dominating the discussion with the majority remaining silent. In the on-line-courses at OISE, however, generally most students are participating and within each group the volume of contribution is relatively equally spread.” (Harasim 1990, p.57).

An empirical criticism often levelled at face-to-face teaching, which mostly uses front-of-class teaching forms, is the high rate of forgotten content and the unintentional socialization

effects of this teaching/learning method. Earlier investigations by the American Audiovisual Society have already pointed out that the sustainability of human learning (retention) rises sharply with the degree of learner activation. They estimate that we retain 20% of what we hear, 30% of what we see and 80% of what we (can) do ourselves (cf. Witzemberger 1985, p.17; Gudjons 1992, p.50). The Munich psychologist Bernd Weidenmann thus observes:

“Every lecture, including transparencies or slides, could be replaced by a printed text or a diskette. Unlike the spoken word, texts allow the learner to adopt an individual pace of learning, process it in various ways and refer back to it at a later point.” (Weidenmann 1995, p.26).

Heinz Klippert levels an even more fundamental criticism at mediatory face-to-face communication, where he highlights the unintentional – 'hidden' – educational effects of teacher-directed learning:

“To put it bluntly, what, then, is the actual educational effect of traditional classroom teaching and instruction? A very dubious ritual indeed is surely the dependence, uncertainty and thoughtlessness induced in the pupils. Many pupils ask themselves why they should give unnecessary thought to the subject matter, if the teacher selects and explains the essentials in the end and sets the test and exams accordingly? It is just this logic based on experience that inevitably leads to intellectual indifference and a creeping disenfranchisement. This criticism is admittedly harsh and pointed but it is nonetheless warranted. The recurrent complaints of many professors about their student's inability to study on their own is an indication as is the unmistakable criticism by many (large-scale) enterprises of the scant personal initiative and methodological and social skills of apprentices.” (Klippert 1994, p.18).

Accordingly, there is little to recommend the hypothesis underlying face-to-face learning that the best way to initiate learning is teaching. The attendant expectation that something that is taught can also be learnt. Only a fraction of what the teacher 'talks about' is actually also acquired by the learner in the long term. The unintentional side-effects of teacher-centred or leader-centred learning culture are also devastating. If we compare this with the activity-centred or 'life-like' learning methods (Arnold 1996) as widely advocated in modern corporate pedagogy, such as projects, business games, guided texts, teamwork with guided questions, etc., there is no reason to automatically assume that these methods are ultimately less important for developing sustainable specialist competency, if we consider the learning time that is 'wasted' by mediatory methods. Rather, activity-centred learning methods are characterized by a qualificatory polyvalence: they impart specialist knowledge and ability in a way that also enables the learner to develop methodical and social competencies at the same time. Activity-centred methods are part of a learning culture that is subject-focused while fostering activity and self-reliance, clearly anticipating the forms of cooperation and leadership that play a central role in modern work organization.

Implications for development cooperation:

Lively and cooperative activity-based learning can constitute a preparation for, and necessary accompaniment to, modern corporate policy which is of growing importance for international cooperation and the continuing education of change agents.

A comparative review and assessment of face-to-face learning or teaching, distance learning and e-learning should not cause us to lose sight of the above findings regarding the limited effectiveness and the unintentional educational effects of the familiar forms of face-to-face learning. As a rule, efforts to develop distance learning and e-learning courses are in danger of 'falling for' the teaching-learning illusion, i.e. the assumption that teaching is an indispensable and appropriate way of initiating learning. When applying these new forms of teaching and learning, account must be taken of experiences gained with self-directed, activity-based learning arrangements.

Hypothesis 8: Face-to-face learning frequently takes the form of front-of-class teaching. In this form, with its low retention rates, it is a very ineffective way of imparting content. Another, greater, problem are the (unintentional) educational effects, i.e. dependence, uncertainty and disenfranchisement of the learners. These tend to impair the development of methodological competencies for autonomous learning, which are essential for learners' personal development and their ability to plan their own lifelong learning. Experience with action-centred, lively and cooperative teaching-learning modes therefore also sets a major didactic benchmark for the use of distance learning and e-learning.

If we look at the specific features and comparative educational advantages of face-to-face learning and/or face-to-face interaction in learning processes, we have to concede - for all the criticism – that there are three competency contexts where the face-to-face relationship is indispensable:

- For one, this is the case in almost all measures where *psychomotor skills* can be imparted, acquired or habitualized via the sequence 'observation' – 'trial activity' - 'direct feedback'. These psychomotor competencies are particularly relevant in a vocational and technical education setting (e.g. skilled worker training, skill training), but also in sport and in parts of academic education (e.g. medical operation techniques). In these areas, favourable experience has been gained with computer simulations and/or virtual laboratories or workshops. Yet the 'real-life' setting, which is always a face-to-face

situation, cannot be replaced by this kind virtual simulation, at best only supplemented. A metalworker can feel the resistance of the material only through direct contact and needs someone to watch and imitate to obtain the necessary direct and very specialized instruction in the use of tools, physical motion, etc.

- For another, the face-to-face relationship with a teacher, mentor or facilitator is also indispensable in all measures where the concern is *personal development* and *social competencies*. No-one can learn communication and cooperation abilities by studying documents or being in a chatroom. The same holds for other key qualifications, such as empathy, which are frequently more important, particularly in training and upgrading executives, than the acquisition of specialist knowledge about management techniques. The whole area of 'emotional competency' (cf. Arnold 2003; Golemann 2002) must also be considered. This competency can only be developed by someone who is ready and able to take a critical look at their own behavioural and response patterns and alter these in an often painful process by assimilating the critical feedback of a coach or the other members of the learning group. Developing intercultural operational competency also necessitates these kinds of self-reflective steps, which is why face-to-face contacts are indispensable here, too.
- Finally, we must not overlook that 'personal motivation' is a factor in all learning areas, also where knowledge is self-directed and can be acquired without the need for face-to-face contact. Topics can come alive when they are conveyed, explained and illustrated with personal enthusiasm. Ties between the teacher and the learner can often be established that foster personal development. In education, this is referred to as 'pedagogic relevance'. Nonetheless, this personal motivation does not justify the front-of-class, face-to-face learning method that dominates our education culture; it merely shows that other learning modes must ensure that they do not degenerate into impersonal learning bureaucracies, reduced to 'content and client management'.

Hypothesis 9: As a rule, face-to-face relationships are indispensable in learning settings that seek to develop behaviour. This applies in particular for the development of practical-professional abilities and skills in vocational and technical education, and also in the academic world. Where key qualifications are imparted and management, emotional or intercultural competencies are developed, too, personal contact between learners and teachers or facilitators is indispensable. Moreover, personality and/or the development of a personal relationship in the educational setup can play a

fundamental motivating role, engendering a sense of identification with and enthusiasm for the contents.

Implications for development cooperation:

International HR development in development cooperation must be clear about whether, and if so how, it aims to develop the personality (e.g. ability to communicate and cooperate, emotional competency) and psychomotor competencies, where forms of face-to-face learning are almost imperative. There must be a candid discussion of whether and how far development cooperation, explicitly and implicitly, aims to establish a relationship with the donor country that can only be mediated along a personal-cum-pedagogic avenue, which would call for a complete reappraisal and new decisions on the shape of the resulting face-to-face contacts.

Distance learning

We are used to seeing distance study and face-to-face study as two opposing ways of organizing learning, where the dividing line is primarily the varying points where the boundaries between teaching and learning disappear. At the same time, education policy attaches great expectations to a convergence of the two alternatives, as indicated by the following statement by the Bund-Länder Commission for Educational Planning and Research:

“The further development of distance study also affords new opportunities for studying in an information society.” (BLK 1997, p.5)

Under ‘distance teaching’ or ‘distance’ or ‘private’ study, a publication from the 90s subsumes

“(…) all forms of teaching and learning (…) that allow for (and require) a didactic-pedagogic personalization of learning largely independently of time, place and personal mediation and at the same time entrust essential didactic functions of the teaching-learning process, such as the organization of subject matter, learning achievement tests, practice transfer, to media (text, audio-visual) and thus provide for guidance for the individual learning process.” (Eckert 1994, p.32).

Here, the *disjunction of time and place in teaching and learning* in distance study is elevated to a didactic vision with far-reaching expectations attached to the scope for personalizing the learning process. The synchronicity and direct interactivity of teaching and learning, which is theoretically a possible, if not always practical reality of face-to-face study, is *implicitly* accorded a *benchmark status*: *We see distance study from a face-to-face perspective and therefore tend to perceive its implicit otherness as a deficient form of teaching and learning.* In other words, it is perceived as a form of learning that ought to be made to resemble face-to-face study as closely as possible by 'adding' social and tutorial components. In particular,

'distance' or didactic distance, the disappearance of boundaries and the time gap between teaching and learning are seen as a problem and great efforts are made to get rid of the 'distance' in distance study as far as possible.

Distance learning can already look back at a *long tradition*, also internationally. This tradition has always sought to overcome the 'tyranny of distance' (Northcott 1984). Distance was seen as a deficit which had to be overcome. The prime concern was to find out how to transform the distance in distance learning back into proximity. Or more precisely: What tricks can be used to do so (Peters 1997, p.36)? The history of distance learning is the history of these tricks. These efforts can be traced into the present and be divided into five categories according to Otto Peters, long-standing principal of Fernuniversität Hagen, a distance learning university, and former Chairman of the International Council for Distance Education:

- *Correspondence model*: Its precursors are correspondence courses – the term 'study letters' is still used today! – some of which can be traced back to the letters of the apostle Paul. The leitmotif of later correspondence courses, universities or schools was: overcoming physical distance and isolation through addressing the learner personally. This model was very successful particularly in the 19th century, following the establishment of a reliable postal system. Otto Peters takes a critical look at the 'correspondence culture' that lingers even today in long-distance learning courses and asks:

“(...) whether the feigned proximity and friendly familiarity are commensurate with the quite different atmosphere in institutions of higher education. How much does it help a professionally experienced student used to studying to have the contents presented in a personal manner and be repeatedly addressed in deliberately informally written study texts? (...) And how detrimental is it when these mechanical and frequently repeated forms of address start to grate?” (ibid., p.37et seq.).

- *Conversation model*: This model sought to assimilate the learner's perspective by drafting the study letters in the form of a didactic dialogue with an imaginary learner. The idea behind this guided didactic conversation (Holmberg 1985, p.26) was to create a kind of conversational atmosphere by using a clear, somewhat colloquial language (ibid.). Holmberg, who made this model known internationally, comes to the following conclusion in his investigations:

“Empathy and personal approaches are thus considered guidelines for presentation of learning matter in distance education.” (Holmberg 1989, p.51)

- Another model of distance education according to Peters is the *teacher model* (Peters 1997, p.41 et seqq.). This model typically tries to transfer as many of the usual teacher functions¹⁴ as possible onto the study material or the additional video cassette, CDs or virtual learning platforms provided. Importance is attached to a learner-friendly layout and to gearing contents towards anticipated real-life settings and applications (e.g. case studies, situational relevance, self-testing assignments). These efforts have led to an important breakthrough towards providing a rationale for a separate distance-education didactics. There was a shift away from the simple - sometimes clumsy – attempt to move closer to the participant towards systematic research into *exactly how* to enhance the self-instructive impact of the material for the learner.
- The *tutorial model* attempts to design material that resembles a consultation, a 'tutorial in print' (Rowntree 1992, p.82). This model stems from the British tutorial tradition, where so-called 'fellows' - not the teachers themselves – provided counselling and guidance to new students. Peters points to the etymology of 'tutor' (Latin: 'protector') and argues that this model

“(…) basically calls on learners to get through the material on their own . The tutorial in print thus only performs an advisory function in cases where difficulties are expected to arise. (...) In this kind of procedure, of course, monologues and expositions as a teaching method are abandoned. The text is not supposed to present contents but to evoke the idea of a *conversation* with an imaginary tutor. Questions are posed, advice is given, views expressed and connections drawn.” (Peters 1997, p.45)
- The *technology-assisted model* denotes all approaches to technically preserve normal teaching lessons in a face-to-face institution of higher education (audiotapes, CDs etc.) and supply these to external – i.e. absent – students. In this connection Otto Peters alludes to the audiotape distance study at Waterloo University in Ontario, which produces and sells about 90,000 audiotapes a year (ibid., p.46). This model deliberately refrains from a

¹⁴ Otto Peters provides a supplementary and illuminating list to our previous considerations on face-to-face teaching and face-to-face communication, where he breaks down the following functional profiles for teachers: “Teachers

- arouse and direct the *attention* of learners,
- arouse and enhance *interest*,
- *motivate* learners,
- specify and provide the rationale for *learning goals*,
- remobilize *prior knowledge* with a bearing on the subject matter,
- present *teaching content* in a sequence of instalments that facilitates reception and understanding,
- repeatedly present difficult subject matter with particular clarity,
- give advice on the best way to learn the contents presented,
- verify teaching and learning performance through *feedback*,
- *practice* with learners,
- help them *apply* what they have learnt.” (Peters 1997, p.42).

special didactic preparation of the material for distance learners who do not come from the 'usual' student milieu, a restriction that may pose a problem in adult didactics, but may perhaps be warranted in financial cost-benefit terms.

Hypothesis 10: Distance learning has a long tradition and has gained diverse experience in handling teaching-learning measures that enable people to learn independently of time and place. In addition to correspondence course experiences originating from way back in the 19th century, models include the conversation model (guided didactic conversation), the teacher model, which has played a pioneering role in many respects (the material as 'teacher'), the tutorial model (tutorial in print) and the technology-assisted model. All these are guided by the inherent didactic concern to minimize or overcome the distance to the learner, which is seen as a handicap.

Implications for development cooperation:

For developing countries in particular, with the frequent large distances between educational institutions and prospective target groups, the distance learning model is an obvious alternative, as experience from many countries of the world shows.¹⁵ Essential for distance education in developing countries, however, is the availability of a functioning postal system that guarantees the punctual delivery of the study letters and the assignments for submission – something that is lacking in many partner countries, or only available in urban regions at best. Nonetheless, for international HR development purposes we recommend stepping up collaboration with distance universities operating almost everywhere in the world and making use of these as distributive channels, developing them further in the process.

If we look at the advantages and disadvantages of distance learning compared with face-to-face forms of teaching, we can say this about the universities: The convergence of teachers and learners in space and time at a 'lecture' has been retained to this day, for reasons related to the resilience of cultural patterns. This is the case even though it has long been possible to present knowledge in ways that make better didactic sense and are better able to facilitate learning, and lectures have long since degenerated into a ritual of university didactic; not, however, the notion of disputation, which is increasingly in decline considering the masses of students that now populate our face-to-face universities. 'Distance' in distance education, which is treated as a deficient form of teaching in comparison with face-to-face teaching and learning, can be completely reinterpreted as a long overdue historical *opportunity to*

¹⁵ Those worth mentioning include the University of South Africa (UNISA), whose roots go back to 1873 and which, with 130,000 registered students, accounts for more than a third of all students in South Africa and is one of the ten largest universities in the world. With 210,000 students, the British Open University also belongs to the world's largest universities, as does the China Central Radio and Distance University, which enrolled more than 600,000 students in 1986, to cite but a few examples.

supersede the synchronicity of teaching and learning in one place at institutions of higher education and universities, but not only there. Seen in this way, it is not the disappearance of 'distance' but the disappearance of (superfluous) proximity or better, 'presence' (in the sense of the unity of time and place in teaching and learning) that marks didactic progress on the way to a modern learning culture. From this paradigm, it is a very small step to the hypothesis that distance education is the future of face-to-face education, a hypothesis that is variously invoked in the relevant literature (Peters 1996, p.19) and that the BLK takes up in its already cited statement: "The further development of distance study also affords new opportunities for studying in the information society." (BLK 1997, p.5).

Hypothesis 11: The ways of imparting knowledge in face-to-face education reach over into our current learning culture from a time when there was little 'intermediate memory'. The distance education approaches that make purposive use of storage media (print media, CD ROMs, etc.) thus also mark the future contours of face-to-face education (= hypothesis of distance education as the future of face-to-face education).

Proceeding from a definition of the organizational-didactic difference between proximity and distance in study courses as a key criterion for interactive opportunities (between teachers and learners), a detailed appraisal reveals that face-to-face and distance education both largely constrain or channel interaction and that 'distance' is a common feature of both. In both distance and face-to-face education, the planning of a course of study in particular is usually carried out without any interaction and coordination with the learners, quite unlike open adult education approaches or those geared to the participants or their real-life environment. Instead, the design, selection and didactic preparation of contents is carried out by the teacher or author and/or - in the case of distance education - the planner as part of the industrial production of a teaching course. Both 'construct' the layout for their course(s) and the implementation without any systematic inclusion of the user, naturally, however taking into account experience gained with previous measures and the anticipation of user interests. Nonetheless, it is valid to say that both forms of study involve *remote planning*. Neither face-to-face nor distance education is designed and conducted in direct exchange with the target group.

The actual 'distance' in distance study does not come into play until the measure is conducted. Here, the distance student is clearly in a different situation to the face-to-face student, without implying that this situation should be gauged as 'worse' or in some way detrimental as

concerns its learning relevance. On the contrary, distance students have to rely more on themselves, since learning in distance education is less dependent on the teaching side than on the individual's ability to acquire the knowledge imparted, as the models outlined above show. To master the subject matter, however, distance learners must be skilled in developing information processing and learning strategies, which - incidentally - are qualities that have recently been accorded increasing weight on the labour market. The face-to-face student has initial difficulty in - and perhaps also lacks adequate opportunity for - developing these general skills and/or 'key qualifications'. Nonetheless, the face-to-face student can engage in dialogue and enjoy direct contact with the teaching staff. This opportunity to have a say in learning goals and co-shape the learning process is generally seen as an essential element in measures that aim at scientific education, not just at knowledge transfer.

But does education and competency-building really only take place in direct interaction at one place and time? Do they not take place *also and perhaps in a far more pronounced way when study is organized such that the learner first acquires, or must acquire, methods (accessing, presentation, documentation and learning methods) and undergoes what educational theory calls 'formal education'?* And are not study courses that foster the mental self-discipline of the learner thus ultimately 'closer', i.e. nearer to the learner and the development of his/her problem-solving competencies, if 'proximity' is understood not just in terms of time and place but also in terms of the directness of the educational effect? From this perspective, on second thoughts we must modify our initial analysis of the proximity-distance relations in distance and face-to-face education, especially as we have already seen that direct interaction in studying is not an end unto itself and that face-to-face study frequently fails to 'keep' its promises of interaction. The constant availability of interaction doubtless served a purpose historically (in the age of scant storage options), but we cannot retain the common forms of teaching and learning in one time and place for nostalgic reasons, only if they prove their functional worth anew. We are still awaiting the evidence.

Hypothesis 12: Face-to-face and distance study both contain didactic features of proximity and distance. If we do not confine our understanding of 'proximity' in teaching-learning processes to a time and place, but also bring it to bear on the directness of the - formal - educational effect (method competency, mental self-discipline, etc.), the impression of greater proximity in distance education cannot be completely dismissed (= hypothesis of the mixture and necessary redefinition of 'proximity' and 'distance' in studying).

In the following, I wish to consider more closely – on two other levels – the proposition that didactic aspects diagnosed at first glance as 'distance elements' turn out, on closer inspection, to enable a greater proximity between teacher and learner than some face-to-face methods:

- One level is the *transparency of the curriculum's content*. The content of distance learning courses is not derived from dialogue or in the teaching-learning discourse; it is structured more clearly in distance-learning material than in the logic and constraints of oral speech that are a feature of lectures and seminars. Distance-learning material also often contains carefully prepared transfer, exercise and reflective assignments that engage learners in a kind of virtual interactivity, calling on them to take a position. Viewed from this standpoint, the transparency and the virtual interactivity of study material often enables the learner to get closer *to* the subject matter and gain a deeper understanding of it; they can respond better to individual questions and learning difficulties that arise in submitted assignments, for instance, while the simultaneous mode of addressing learners in face-to-face study means that any response to an individual problem suspends the educational process for the other learners. The picture emerging, then, is *that distance study may well enable greater 'proximity' than face-to-face study, i.e. that it is closer to the substance of the learning process and the individual comprehension and assimilation problems of the learner.*
- Another level where distance study appears to have greater didactic proximity is that of *learner motivation*, and here I regard the distance-study mode as 'closer' as regards content and time. In many distance-learning courses the students have a broad choice from an overall curriculum; in compliance with general and formal requirements they can ideally compile the content of their individual learning programme to suit their interests and specific motives, which are often linked to their occupation. But even while already engaged in a course of study, they are not obliged to pay simultaneous attention, as they would be in a face-to-face setting, and need not 'take note' of everything if they are only interested in parts of the course or special aspects of a topic.

This form of asynchronous use of a textually linear (as opposed to a temporally linear) course curriculum ultimately calls for greater structural adjustment in long-distance learning measures to suit the needs and requirements of the user.¹⁶

On balance, the impression is that the learning type of self-directed learner is very widespread in distance study, but that this didactic environment is 'used' also by other learning types, including more conventional types (such as the teaching-learner). This *multiple use* is made possible because distance study is an externally organized form of self-directed learning.¹⁷ Distance-education didactics must cater for different learner expectations and learning styles at the same time. The development of distance study into an independent study mode, which is a useful and welcome trend in many respects in adult didactics - and hence also into a role model for more self-organized learning in face-to-face study - must therefore also provide for learner types who employ learning strategies that are less typical of distance learning, but whose expectations also need to be met.

As already pointed out, we all tend to measure distance education against face-to-face study and against this backdrop, to conceive of it as a deficient mode of study. This also applies to the supposed sustainability of learning processes. Maybe because we ourselves have 'grown up' in a face-to-face teaching environment, in my view we are too ready to assume that solely or largely *verbal* presentation of knowledge necessarily results in its sustainable acquisition, a hypothesis that Klaus Holzkamp calls the 'teaching-learning short circuit'. In a 1996 interview we were able to conduct with him shortly before his death, Holzkamp pointed out that this kind of forced learning through teaching "(...) over the heads of the learners (prompts) above all opposition, refusal, evasion, where - assuming there is any learning going on at all - this

¹⁶ As far as learning and learner motivation in distance study itself is concerned, in a Kaiserslautern study students from all disciplines stressed the motivational character of asynchrony. Particular importance was attached to the ability to schedule study-time as required and to be largely independent of a specific locality (93.1% and 85.3%, resp.). As to the framework conditions of study organization, 'sensibilities' varied by subject with *distinct differences between students with and those without a technical-scientific background*: The latter group, composed of students taking the adult-education and the total quality management distance study courses, rated the special didactic features of distance study (working with didactically prepared material, support during face-to-face phases) clearly higher than the students with a technical-scientific background on the one hand; but on the other hand they were also less 'sensitive' to the deadlines, performance requirements and learning goals in distance study; they were less interested in greater student involvement (e.g. in decisions on performance). *Altogether, our impression is that technical-scientific distance learners are more atypical, but more 'adaptable'* (cf. Arnold/Lehmann 1997).

¹⁷ P. Jarvis stresses this aspect: "(...) it is only with distance education that learners are apparently free from the immediate presence of teachers. But, and necessarily, distance education institutions are very centralized in many ways, so there is no genuine learner autonomy in this form of education either." (Jarvis 1995, p.139).

‘defensive learning’ is not geared to exploring the subject matter, but merely to ‘placating’ the teacher so as to avoid sanctions.” (Holzkamp 1996, p. 24). Holzkamp also alludes to the *scandalously low sustainability* of ‘teaching-learning’, comparing it against the model of ‘expansive learning’ (ibid.) that is more closely aligned with the questions and needs of the learners and their ‘learning projects’, as Holzkamp says.

In many respects, distance study follows the teaching-learning pattern but ‘spares’ (to use an expression by Bernd Weidenmann) the ‘working memory’ of the students and - unlike face-to-face study - gives them scope to acquire the subject matter at their own pace, enabling them to take their own time for a more in-depth and longer consideration of certain aspects. In this context, Weidenmann states that:

“Language that is spoken and heard is ephemeral. The page of a book or a figure is different; I can look at them as long and as often as I wish. As a listener, then, I permanently depend on my short-term memory to connect the new information with the previous and current information. As I cannot remember everything at the same time, I must keep deciding what could be unimportant and what important. Perhaps I pause for some moments to decipher a statement or reflect on it myself. For a while, therefore, I cannot take absorb the contents of the lecture because the capacity of my working memory is no longer sufficient to absorb new information. I may then lose the thread. So I use up more capacity to work out what was said during my ‘downtime’. As a result, I am again not really following for a while. Remember, all this is not a pedagogic accident: It is the normal consequence of the limits of the human working memory.” (Weidenmann 1995, p.56 et seq.)

This detailed description of the small steps in synchronous face-to-face teaching-learning clearly illustrates its structural limitations and the specific features that impair sustainability. These are largely due to the fact that people in a learning process are evidently hardly able to maintain continuous attention; rather, they learn *discontinuously*, which is why the study mode that caters for the discontinuous acquisition is also able to ensure more sustainable learning - at least in its basic approach. This assessment would also appear to be warranted because we have already known for a long time that sustainable learning (in the sense of retention) rises substantially with the degree of learner activity.

If we consider the qualitative and didactic advantages of learning supported by study material outlined so far, along with its suitability for adults, this hypothesis of the exemplary role of distance study for face-to-face study becomes apparent immediately. This holds in particular for the assumption that self-directed learning in distance study does indeed appear to facilitate the development of comprehensive competencies. Nonetheless, the expository and monocontextual spirit may be even more deeply inherent in distance than in face-to-face study, since information, facts and ideas are condensed into a script, which is uncharacteristic of the multiple perspectives and ephemerality that is increasingly a feature of our knowledge.

Hypothesis 13: The transparency of content and virtual interactivity of study material often enable the individual to get closer to the subject matter than is possible in the simultaneous mode of addressing learners in face-to-face study. In terms of learning motivation, too, distance study can come 'closer' to the needs and requirements of users. Finally, the possibility of asynchronous use of the course material is better suited to their time schedules and preferences (= hypothesis of the greater proximity of distance study to users).

If we choose the dual-mode strategy¹⁸ of *dovetailing distance and face-to-face education* instead of *columnizing parallel structures*, I believe we can expect such a mixture not only to lead to a higher competency impact (self-organized learning), but also to a greater multiplicity of contexts in scientific learning. *Seen from this vantage point, i.e. in the dual mode, distance study can indeed serve as a model for scientific learning in a knowledge society.*

Hypothesis 14: Teacher-centred learning, the predominant teaching form of face-to-face study, is marked by a scandalously low level of sustainability. Due to its nature, spoken and heard language overtaxes the 'working memory' of students. The dual mode can therefore point the way to another future learning culture that can cater to both the advantages and the structural limitations (e.g. factuality of 'printed' knowledge versus provisionality).

E-learning

There is a Babylonian confusion of terminology in computer-based and net-based learning. We have computer-based training (CBT), computer-assisted learning (CAL), web-based learning (WBL) or online learning and/or virtual learning, to name just a few of the many different terms. In recent years, e-learning has gained increasing currency as an all-embracing category. This concept encompasses everything "currently (but also previously) available on the market for personal or organizational, local or distributed, synchronous or asynchronous, individual or collaborative, receptive or interactive (learning) (...), although these varieties can be more or less combined or integrated." (Bloh/Lehmann 2002, p.18).

The key advantage to e-learning is its independence of time and place, which enables users to avail themselves of the learning options in a fairly flexible and personalized way. E-learning

¹⁸ In the international debate on distance study, the 'dual mode' denotes measures 'available' in both the face-to-face and distance-learning modes and where it is partly up to the students themselves what mode they want to study, or wish to switch between. Penn State University in the USA offers 'dual' programmes.

shares this advantage with distance learning, which is why we can argue that e-learning is an extension of distance study.

Hypothesis 15: Didactically prepared distance-learning material to facilitate learning is the precursor of a learning model that will constitute the future of sustainable learning: self-directed learning in a multimedia network.

Distance students also learn in an asynchronous way in line with their own time windows, and for this learning they need the self-study skills that enable them to explore learning contents independently while self-directing much of their preparation for exams and projects.

In the course of time different scenarios have emerged regarding the application of new media in education courses; they differ by their degree of virtualization. In the following we will look at two models.

According to Bremen (2002), there are three scenarios for media application that differ in the form of organization:

- At the first level, media can be used to support (traditional) face-to-face teaching (**enrichment approach**), where the multimedia applications are presented in a teaching environment or proffered for preparation and follow-on. In this approach, new media are used as distribution or visualization media and as self-learning modules for preparation and follow-on.
- At the second level, multimedia components are offered to complement face-to-face teaching (**integrational approach**). In this case, greater use is made of net-based communication facilities. This takes place in hybrid teaching environments, combining face-to-face and online phases.
- At the third level, multimedia substitutes face-to-face teaching (**virtualization approach**). Here, traditional teaching venues are completely superseded by e-learning measures (by virtual seminars, for example), although these are supposed to be underpinned by face-to-face phases (mostly at the beginning or end).

Lehmann (2002), in contrast, distinguishes four optional prototypes for the application of new educational media as part of the strategy development of a higher education institution or other adult education institutions:

Additive mode	Mixed mode	Semi-virtualized mode	Fully virtualized mode
Start up	Strategically important field of experimentation	Virtual training courses	Virtual education providers
Expanded interaction options Digital distribution Supplementary virtual forms of contact offered	Virtualization of individual teaching events, subcomponents or courses while retaining face-to-face teaching components	Virtualization of single or several training courses without alternative face-to-face facilities	Fully developed education providers All the functions of an institution are mediated by the web; the campus is 'defunct'.

Fig. 4: Development options of e-learning (cf. Lehmann 2002, p.231, modified)

- The **additive mode** is equivalent to a *digital declaration of intent*, an 'initial approximation to the information age' (Lehmann 2002, p.232). This primarily simplifies administration (e.g. by way of new, simpler methods of distribution) and expands the interaction opportunities (through e-mail consultations).
- The **mixed mode** is an expanded model of the previous forms of teaching and learning that combines virtual online with traditional face-to-face forms. The aim is to partake of technical changes in learning culture, round off content and improve quality (e.g. through tutorials).
- The **semi-virtualized mode** is meant to reach user groups in particular that cannot or do not wish to attend traditional educational institutions. Individual or several courses of study are provided exclusively online. This reduces space requirements, but the decentralized structures available can also be utilized more effectively in cooperative networks.
- The **fully virtualized mode** can potentially act as an agency for networking the mixed-mode components. This comprises the use of virtual teaching measures, but also the 'transformation of all the administrative functions' (Lehmann 2002, p.231). This can facilitate resource sharing (with other educational institutions, for example).

A comparison of the two models illustrates the ways multimedia teaching/learning measures can be used from a strategic-didactic perspective:

	Additive mode	Mixed mode	SV mode	FV mode	
Virtualization acc. to Bremer					Virtualization approach
					Integrational approach
					Enrichment approach
	Virtualization acc. to Lehmann				

Fig. 5: Strategic-didactic options in multimedia teaching courses

Hypothesis 16: When using and implementing online-assisted forms of teaching and learning (e-learning), there are four different strategic development options, each with its own specific advantages, conditions for use (preconditions) and perspectives: (1) the additive mode (supplementary virtual facilities), (2) the mixed mode (parts of the measures are virtualized), (3) the semi-virtualized mode (virtualization of individual programmes) and (4) the fully virtualized mode (fully developed virtual courses).

Experience gained in recent years with the application of multimedia in teaching has shown that it is useful to combine the various teaching and social forms as well as different media into a media portfolio geared to the relevant target group in order to exploit the advantages of web-based and traditional modes of learning, and to create synergies. The following points are of strategic relevance:

- Need for learning advice
- Need to include forms of social exchange (cf. Döring 1999)
- Phased enlargement of media competency as the fourth cultural technique (cf. Baacke 1999)
- Adjustment of the teacher role and the role of those responsible for designing the teaching-learning arrangement

New media offer many opportunities for applying multimedia and telecommunicative learning. Studies have not, however, been able to prove that these applications are more

efficient than traditional courses. In the USA in particular, many comparative studies on online learning and face-to-face learning have been conducted, largely in the university sector. Most found no significant difference in efficiency or only small advantages for online learning (No Significant Difference Phenomenon, Saba 2000).¹⁹ Nor are the findings of research so far on hypermedia systems particularly encouraging, a fact frequently attributed to a lack of skill in handling new media (cf. Dillon/Gabbard 1998; Tergan 2002). In this connection, Kerres (2001) also sheds a critical light on frequently advanced arguments in the discussion on the advantages of new media. There is no clear empirical evidence that using new media directly improves learning motivation, learning achievement or the efficiency of education courses (cf. Kerres/Petschenka 2002).

These findings substantiate our hypothesis that the opportunities afforded by new media do in fact depend more on the didactic design of the learning environment than is often assumed.²⁰ This is corroborated by the findings of an extensive Australian study that reveals that high-quality teaching with new media is based on the same success criteria as in traditional forms of teaching, that is, on the didactic design and the didactic abilities of teachers (Alexander/McKenzie 1998, cited after Bremer 2002).

In our view, a problem with the use of new media is that many multimedia courses are modelled on traditional forms of teaching or learning. Using multimedia resources, they replicate learning from books or lessons already held by teachers. Learning media for adult learning requirements must, however, be designed quite differently. A major opportunity afforded by new media is the option 'for *another kind of learning*' (Kerres/Petschenka 2002, p.241); it is not enough to simply replicate traditional learning processes using new media.²¹

Implications for development cooperation:

This opens up diverse options for using e-learning for international HR development. Experience shows that in such contexts, it makes sense to start with the additive mode, where little or no experience has been gained so far in handling new educational media. In cooperation with national providers/sponsors, it is a good idea to experiment with mixed-mode projects

¹⁹ See also: <http://teleeducation.nb.ca/nosignificantdifference/>

²⁰ In the study entitled 'An evaluation of information technology projects in university learning', over 100 projects applying new media in teaching were examined.

²¹ Repeated reference is rightly made to the 'didactic deficit' in planning and implementing e-learning. This pertains to multimedia courses as much as those of face-to-face teaching. Learning measures with new media are sometimes measured against benchmarks that are tacitly passed over for traditional forms of teaching (e.g. learning effectiveness, efficiency, ...).

(virtualization of subcomponents or single courses). From here, e.g. as part of a separate project component, one can then proceed to build up individual virtual training courses (semi-virtualized mode).

Experience indicates that the fully virtualized mode calls for several years of prior experience with e-learning. In addition, it is not absolutely necessary to develop and distribute full-scale virtualization in the partner countries themselves, since distance is 'disappearing' in development cooperation as well due to worldwide networking. We therefore recommend the centralized development of individual standard upgrading themes and making these available on a GTZ educational server. It is, however, also necessary to build up and maintain a support apparatus. E-learning is not electronic learning; we are still dealing with people who are learning,²² enquiring and seeking contact – but at an electronic level. We need an apparatus with adequate resources.

4 Comparative advantages of individual forms of distribution

The design and use of all teaching-learning and distribution channels are subject to the so-called *implied didactic context* (Klafki 1985). This means that no form has greater didactic worth per se and can inherently ensure sustainable competency-building learning better than others. Rather, when adopting distance learning or e-learning forms we must proceed on the premise that any decisions regarding goals, contents, methods and media must be taken in line with a general set of aims. Changes to any parameters will affect the others and are not random (Jank/Meyer 1994, p.197). For this reason, Bloh/Lehmann are right to point out that

“(…) there is no reason to assume that (in the online sector) this general didactic argument should not apply and that the design of an online learning environment is less complex than that of a learning unit in the face-to-face mode.” (Bloh/Lehmann 2003, p.56)

When looking at the *comparative advantages* of the three learning organization and distribution modes examined, we can say that the above-mentioned five principles of an

- active,
- self-directed,
- constructive,
- situational and
- social

²² Also with the same cognitive and emotional mechanisms as in face-to-face learning – a fact that is frequently overlooked and tends to be misrepresented by notions like e-learning, virtual learning, blended learning.

process (cf. Fig. 2) can (or cannot be) be brought to bear both on the traditional setting of face-to-face teaching and on distance study or multimedia settings (e-learning). Learning as a social process – as we know from interactive educational work - is certainly easier to arrange in traditional learning environments than with the new media, but – as already mentioned – e-learning also enables a relatively open social exchange in very specific forms, with their own opportunities and difficulties,²³ which poses the question of whether we should also make a fundamental reappraisal of the actual role of social relations in teaching-learning processes.²⁴ Making successful didactic use of the specific advantages of the new media is not just measured by the provision and demand for multi-media applications; we must also be assured that the learners actually learn in a sustainable manner that develops competency. Two-dimensional or three-dimensional graphics, colour figures, audio and video sequences, etc. can also be deployed to didactic effect in traditional learning settings with 'old' media. The personalization of learning paths, a purposive increase in social interactivity and 'practising' as well as the promotion of 'self-learning competencies' for self-directed lifelong learning can be achieved in traditional settings, but it is equally possible that they may *not* be (cf. Arnold et al. 2003).

If new media are added to existing methods, there is a danger that most attention is paid to the existing structure (e.g. information infrastructure). What is needed in contrast is a sustainable 'change in learning culture' (cf. Arnold/Schüßler 1998): *Only through a new learning culture can the use of multimedia facilities really bring added benefit. We should not follow tradition too closely. Because certain teaching tasks are quite closely bound up with certain forms of event (e.g. introduction – lecture), when assessing alternatives it is easy to look less at whether they are best suited for the teaching task and more at whether they can do the same as the traditional teaching form in this context, with new options are first viewed through old spectacles. We overlook that perhaps the old form has already been obsolete for a long time and only persists due to the resilience of learning culture patterns.*

Implications for development cooperation:

²³ On the problems with CMC (*Computer Mediated Communication*) see Döring (1999).

²⁴ Just as people do not learn in a sustainable way just because they more or less steer themselves through a learning environment, learning does not take place just because they come together in seminar room in a silent, sedentary learning setting. This is the assumption, though, when we require of the new modes of learning a stricter rationale than we do of familiar forms of face-to-face learning. The same applies here too: *Everything needs to be audited and matched against criteria, which in turn calls for a concept of sustainable learning that develops competencies in line with adult needs and conditions!*

For international HR development this means adopting the principle of 'audit everything'! Only by auditing and assessing individual teaching and distribution forms on the basis of criteria can we really progress towards developing sustainable competency-building courses. To reiterate the point: Forms of face-to-face learning can be sustainable and can develop competencies, just as forms of e-learning and distance study can be less effective. In all their glory, new methods and resources should not blind us to the actual didactic challenge facing international HR development!

Nonetheless – beyond the didactic issue – there are also strategic reasons why using teaching-learning forms that are independent of time and place are particularly attractive for international HR development. These strategic reasons are related to rolling back 'travelling education and addressing participants directly and more conveniently using distance teaching and/or e-learning courses. This strategic use of new teaching-learning forms also makes sense because they make transfer easier, particularly in development cooperation. It calls, however, for HR development strategies that enable in-service learning. Supervisory and support facilities need to be developed and maintained, since self-directed learning in the distance or e-learning mode is directed by the learner, but he/she needs guidance and advice. The success of these kinds of measures – as international discussion has now established – depends on three factors: 1) support, 2) support and 3) support.

Aside from didactic aspects, the comparative assessment of face-to-face teaching, distance learning and e-learning must therefore also account for strategic considerations in development cooperation. And it is precisely the latter that point to the high strategic relevance of stepping up the use of forms of distance learning and e-learning that are not subject to traditional boundaries. Based on a general conceptual design for adult education ('criteria for sustainable competency-building'), it is recommended to identify theme clusters where standard upgrading modules can be given a new didactic design and prepared for use in distance study or e-learning (e.g. project management, vocational training for instructors).

Decisions can be taken on the basis of the aspects compiled in the table below:

Mode	Typical features	Genuine advantages	Genuine disadvantages
Face-to-face teaching	People come together to learn, grouping around an older, experienced or even specialized professional who passes on his/her knowledge and competencies as a 'knowledge agent'.	<ul style="list-style-type: none"> - Comparatively low initial investments for new courses - Face-to-face contact and opportunity for direct social cooperation - Imparting psychomotor abilities in situational learning ('imitation', learning by watching and doing) - Personal development and commitment (personality as motivation factor, pedagogic relevance) 	<ul style="list-style-type: none"> - Simultaneity (learning at one pace) guided by of a teacher-centred plan ('head waiter syndrome') - The much-praised interaction is often only a dialogue with one learner while the majority remains silent ('learning culture of the silent/sedentary listener'), although of course this effect can be avoided by an appropriate didactic-methodological scenario
Distance learning	“(...) includes all forms of teaching and learning (...) that allow for (and require) a didactic-pedagogic personalization of learning largely independently of time, place and personal mediation and at the same time entrust essential didactic functions of the teaching-learning process, such as the organization of subject matter, learning achievement tests, practice transfer, to media (text, audio-visual) and thus provide for (a) guidance for the individual learning process.” (Eckert 1994, p.32)	<ul style="list-style-type: none"> - General transfer proximity due to the learners 'staying' in their real-life setting and occupation (in in-service learning) - Learning content can be situated - Independent of time and place (asynchronous learning) - Unlimited number of participants possible in principle (industrial model) - Comparatively high level of self-directed learning (autodidactic learning) 	<ul style="list-style-type: none"> - Higher initial investments (study material development, mentor system, etc.) - Ongoing 'renovation' investments (for updating study letters) - Operational postal service vital - Trend towards didactic 'staple diet' (the same for all) through standardized courses
E-learning	... can be understood "as a generic term for all variants internet-based teaching and learning measures" (Kerres 2001, p.14), i.e. <i>as learning in virtual information and communications networks (also using CD ROMS, videoconferencing, etc.)</i> .	<ul style="list-style-type: none"> - Highly convenient layout and handling (convenience lead) - Transfer proximity possible thanks to learners 'staying' in their real-life setting and occupation (in in-service learning) - Learning content can be situated and personalized (through hypertextual multibranching) (face-to-face at a distance) 	<ul style="list-style-type: none"> - Net access must be ensured - Permanent 'maintenance' of the learning environment (also for updating) and guaranteed tutorial system - Very high initial investments in comparison - Problems of net access and availability of efficient computers

		<ul style="list-style-type: none"> - Unlimited number of participants in principle (industrial model) - Independent of time and place (asynchronous learning) - Comparatively high level of self-directed learning (autodidactic learning) - Can be disseminated worldwide - Highly accessible in principle 	
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There is no doubt that the main advantages of using new media lie in their independence from time and place as contrasted with traditional (face-to-face) events. Moreover, the following specific advantages must be stressed:

- Convenience lead
- Easier to standardize
- Easy to reproduce
- Ability to activate

The major advantage of new media lies in the greater convenience afforded by this integration. This alone does not constitute a didactic advantage, but simply more convenient and faster utilization options. Due to improved standardization, learning contents can be used across institutions, through cooperation amongst the various educational establishments. Ease of reproduction facilitates the updating and 'maintenance' of learning contents, though only in the longer term. And finally, their activate potential offers an opportunity to reach new user groups.

The implementation of new media must, though, be in line with pedagogic *strategies*. That is the only way they can contribute to improving learning culture. One advantage of applying multimedia learning measures is the possibility of separating cognitive acquisition and

practical exercises: if the theoretical foundation has been laid via online courses, teachers in face-to-face phases can concentrate more on applied teaching.

Finally, however, we need to mention that all the learning modes examined can have a very different effect on different learning types. The cultural factor also has a disparate effect.

Comparatively few findings are available to date on the issue of how online learning is shaped by culturally patterned behaviour (Labour et al. 2000, p.6), but online tutors have observed that the following cultural specifics determine online communication:

- Choice of words
- Formality or informality of writing
- Amount of self-disclosure
- Amount of willingness to take risks by sharing ideas or comments (ibid. p.6-2)

Labour et al. summarise:

“What is not always immediately accessible to the reader are the cultural meanings that the participant wishes to convey in the message via the choice of vocabulary, syntax or metaphor, etc.” (ibid., p.6-3)

Considerations of this sort point to an aspect that is of fundamental importance especially for international cooperation. The way we handle the new learning technologies is subject to universal standards at first sight only; learning itself, i.e. deciphering, interpreting, acquiring and applying contents in the learning process, follows patterns that are subject specific (keyword: learning types) and culture specific (keyword: culturally patterned). The advantages and disadvantages of all learning and distribution modes must therefore be analyzed against the backdrop of the as yet modest research findings on the intercultural differences in learning behaviour and learning cultures.²⁵

²⁵ One starting point here could be the earlier work of Renate Nestvogel (cf. Nestvogel 1982).

5 Outlook: Scenarios

The following scenarios are taken from cooperation in vocational and technical education:

End of long-term upgrading

Four technical teachers from a technical secondary school in Guatemala are to receive upgrading in Germany. The staff have serious misgivings because the instructors are dedicated colleagues who play a major role in school development. As if in answer to the problem, an offer arrives for a multimedia sandwich course from Inwent: a two-year programme made up of two distance-learning phases on technical and occupational education topics, and at the same time two six-week compact phases, one in Germany, one in Spain, to enhance technical skills based on the distance study course and try out/experience new didactic teaching methods.

The distance-study phases are under close guidance in an online tutorial system by a German and a Spanish university. Every two weeks, the participants must prepare assignments for submission for which they receive detailed feedback. They are also required to report and reflect on their experiences in applying what they have learnt in their school setting. To this end a chatroom is made available to them at certain times every week, where they can clear up questions and discuss problems with the tutor.

A condition for admission to the sandwich course is the release of the instructors from their duties for 15 hours a week. They undertake to pursue their studies in this time and not to engage in other gainful employment. All these details are agreed in an upgrading agreement between the German coordinating institution and the Guatemalan side.

End of 'travelling education'

In an Indonesian project, all lecturers in occupational education are to be trained to professionalize local training centres for instructors and technical teachers. A four-month e-learning programme is chosen that provides texts, tasks and applied cases in a virtual learning environment that focuses on relevant issues in occupational, adult and university education. The participants remain in their positions but are released for study one day a week. After enrolment in the programme a training module is 'released' every month, where students work independently on text and assignment material on certain subjects and receive credit under a points system. At the same time they can communicate closely with their tutor at Inwent who inspects and comments on their work and discusses it with them. This tutor is not a regular employee but is specially contracted to function as a guide in addition to his normal occupation. The curriculum includes the preparation and adaptation of subject matter from a Swiss and Scandinavian university cooperating in this programme as part of a syndicate. Course credits acquired may be counted towards a Masters programme run by these universities using distance learning and e-learning. Each participant therefore has access to further education beyond this programme where they can obtain a university degree.

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